


China State Construction Engineering (Hong Kong) Ltd.

Contract No. CV/2007/03

**Development at Anderson Road –
Site Formation and Associated
Infrastructure Works****Quarterly EM&A Summary Report for
March 2018 to May 2018**

August 2018

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Reviewed, Approved & Certified:	Yiu Wah Fung	

Version: 0

Date: 3 August 2018

Disclaimer

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Ref.: OAPANDSNEM00_0_2061L.18

24 August 2018

Engineer's Representative
Ove Arup & Partners
Level 5, Festival Walk
80 Tat Chee Avenue
Kowloon Tong, Kowloon
Hong Kong

By Post and Fax: 2407 8382

Attention: Mr. Cliff Ko

Dear Sir,

**Re: Contract No. CV/2007/03 (Environmental Permit No. EP-140/2002)
Development at Anderson Road
Site Formation and Associated Infrastructure Works
Quarterly EM&A Report for March 2018 to May 2018**

Reference is made to the Environmental Team's submission of the draft Quarterly EM&A Report for March 2018 to May 2018 received by e-mail on 3 August 2018.

Please be informed that we have no adverse comment on the captioned submission and thereby write to verify the captioned submission.

Thank you very much for your kind attention and please do not hesitate to contact the undersigned should you have any queries.

Yours faithfully,



David Yeung
Independent Environmental Checker

c.c. AECOM
CSCEC

Attn.: Mr. Y.W. Fung
Attn.: Mr. Holmes Wong

By Fax: 3922 9797
By Email

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EXECUTIVE SUMMARY

The Project “Development at Anderson Road – Site Formation and Associated Infrastructure Works” (hereafter called “the Project”) is proposed to form platforms for housing development and associated uses in area of about 20 hectares, and to carry out necessary infrastructural upgrading or improvement works to cater for the proposed development.

China State Construction Engineering (Hong Kong) Limited (CSCE) was commissioned as the Contractor of the Project. AECOM Asia Co. Ltd. (AECOM) was employed by CSCE as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) works for the Project.

The impact EM&A for the Project includes air quality and noise monitoring. The EM&A programme for Sau Ming Primary School (ID 4) and Sau Mau Ping Catholic Primary School (ID 5) commenced on 1 May 2008, while for Kwun Tong Government Secondary School (ID 1A), On Yat House (ID 2) and Sau Nga House (ID 3) commenced on 1 June 2008.

The monitoring stations ID 4 & ID 5 will serve both the entire Development of Anderson Road (Schedule 3 Designated Project (DP)) project as well as the Widening of Po Lam Road (Schedule 2 DP) project.

The construction for the Widening of Po Lam Road (Schedule 2 DP) project was commenced on 21 September 2011.

This report documents the findings of EM&A works for ID 1A, ID 2, ID 3, ID 4 and ID 5 conducted in the period from 1 March 2018 to 31 May 2018. As informed by the Contractor, construction were:

- Site clearance works
- Defect rectification works
- Construction of rock dowels
- Installation of ID tag in Manhole / Chamber / Catchpit
- Construction of planter
- Reinstatement of existing cross road ducts for traffic signal system
- Construction of handrail
- Sprayed concrete for slope
- Rock mesh installation

Environmental Monitoring Works

EM&A Programme

A summary of monitoring and audit activities conducted in the reporting quarter is listed below:

24-hour TSP monitoring	18 sessions
1-hour TSP monitoring	54 sessions
Daytime Noise monitoring	14 sessions
Environmental Site Inspection	14 sessions

Breaches of Action and Limit Levels

All 1-hour TSP results were below the Action and Limit Levels in the reporting quarter.

All 24-hour TSP results were below the Action and Limit Levels in the reporting quarter, except for two (2) Action Level exceedance at monitoring location ID 2 on 29 March 2018 and ID 5 on 7 April 2018.

One (1) Action Level exceedance at monitoring location ID 2 was recorded on 29 March 2018. Based on the investigation, the Action Level exceedance was considered unlikely to be due to the Project-related construction works. No further Action/Limit Level exceedance was recorded at ID 2.

One (1) Action Level exceedance at monitoring location ID 5 on 7 April 2018. Based on the investigation, the Action Level exceedance was considered unlikely to be due to the Project-related construction works. No further Action/Limit Level exceedance was recorded at ID 5.

According to the information provided by the Contractor, no Action Level exceedance of noise was recorded since no noise related complaint was received in the reporting period.

No exceedance of Limit Level of noise was recorded in the reporting period.

Complaint, Notification of Summons and Successful Prosecution

According to the information provided by the Contractor, no notification of summons and successful prosecution were received in the reporting quarter. There was one (1) environmental complaint recorded on 20 April 2018. The complaint was about dust emission by road marking removal activity on Lee On Road. After investigation, road marking on road pavement was removed by road milling machine on site. The Contractor reported that water spraying has been provided before and during road marking removal activity. However, minor dust impact may have been generated. The Contractor was reminded to ensure that sufficient water spraying was provided during road marking removal activity to suppress dust generation. During the follow-up site visit on 26 April 2018, road marking removal activity has been completed. No other dust emission was observed on site. The cumulative statistics on complaints has been updated in **Appendix F**.

1 INTRODUCTION

1.1 Scope of Report

1.1.1 This is the quarterly Environmental Monitoring and Audit (EM&A) Report for the reporting period from 1 March 2018 to 31 May 2018 under the Project “Contract CV/2007/03 - Development at Anderson Road – Site Formation and Associated Infrastructure Works” (hereafter called “the Project”), which serving for both the entire Development of Anderson Road (Schedule 3 Designated Project (DP)) project as well as the Widening of Po Lam Road (Schedule 2 DP) project (which was commenced on 21 September 2011).

1.1.2 This report presents a summary of the EM&A works, list of activities and mitigation measures proposed by the Environmental Team (ET) for the Project during the reporting period.

1.2 Project Organization

1.2.1 The project organization structure is shown in Appendix A. The key personnel contact names and numbers are summarized in Table 1.1.

Table 1.1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
ER (Ove Arup)	Senior Resident Engineer	Cliff Ko	2407 0300	2407 8382
	Assistant Resident Engineer (Civil)	Brian Wan	2407 0300	2407 8382
IEC (Ramboll)	Independent Environmental Checker	David Yeung	3465 2888	3465 2899
Contractor (CSCE)	Site Agent	Holmes Wong	2704 2095	2702 6553
	Safety and Environmental Officer	Raymond Ma	6221 9331	2702 6553
ET (AECOM)	ET Leader	Yiu Wah Fung	3922 9366	2317 7609

1.3 Summary of Construction Works

1.3.1 The Contactor has carried out major activities in the reporting quarter. Details of the works undertaken in this reporting period are listed below:

- Site clearance works
- Defect rectification works
- Construction of rock dowels
- Installation of ID tag in Manhole / Chamber / Catchpit
- Construction of planter
- Reinstatement of existing cross road ducts for traffic signal system
- Construction of handrail
- Sprayed concrete for slope
- Rock mesh installation

1.3.2 The general layout plan of the Project site showing the contract area is shown in Figure 1.1.

1.3.3 The environmental mitigation measures implementation schedule (EMIS) are presented in Appendix B.

2 SUMMARY OF EM&A PROGRAMME REQUIREMENTS

2.1 Monitoring Parameters

- 2.1.1 The EM&A Manual designated five monitoring stations to monitor environmental impacts on air quality and noise due to the Project. The monitoring locations are depicted in Figure 2.1.
- 2.1.2 The monitoring stations ID 4 & ID 5 will serve both the entire Development of Anderson Road (Schedule 3 Designated Project (DP)) project as well as the Widening of Po Lam Road (Schedule 2 DP) project.

2.2 Environmental Quality Performance Limits (Action/Limit Levels)

- 2.2.1 The environmental quality performance limits (i.e. Action/Limit Levels) were derived from the baseline air quality and noise monitoring results of Kwun Tong Government Secondary School (ID 1A), On Yat House (ID 2), Sau Nga House (ID 3), Sau Ming Primary School (ID 4) and Sau Mau Ping Catholic Primary School (ID 5) and / or as defined in the EM&A Manual for air quality and noise impacts.
- 2.2.2 The baseline condition of air quality (for ID 1A, ID 2 & ID 3) in the Project site was reviewed in August 2008 upon agreed by ER and IEC. Reviewed Action Levels for air quality at ID 1A, ID 2 and ID 3 were established in September 2008. The latest Action and Limit Levels (established in September 2008) for all monitoring parameters are summarized in Appendix C.

2.3 Environmental Mitigation Measures

- 2.3.1 Relevant environmental mitigation measures were stipulated in the Particular Specification and EP (No.: EP-140/2002) for the Contractor to adopt. A list of environmental mitigation measures and their implementation statuses are given in Appendix B.

3 MONITORING RESULTS

3.1 Air Quality

- 3.1.1 Air quality monitoring, including 1-hr and 24-hr TSP, was conducted for at least three times every 6 days and for at least once every 6 days respectively at the 5 monitoring stations (ID 1A, ID 2, ID 3, ID 4 and ID 5), in accordance with the EM&A Manual.
- 3.1.2 Fifty – fourth (54) sessions of 1-hr TSP monitoring and eighteen (18) sessions of 24-hr TSP monitoring were conducted for the 5 monitoring stations (ID 1A, ID 2, ID 3, ID4 & ID5) in the reporting quarter.
- 3.1.3 The weather was mostly sunny, fine, occasionally cloudy and rainy in the reporting quarter. The trend of impact air quality monitoring results for the reporting quarter is given in Appendix D. Major dust source included construction activities of the Project (i.e. construction of rock dowels and site clearance works), concurrent construction activities of another project carried out in the vicinity and nearby traffic emissions.
- 3.1.4 All 1-hour TSP results were below the Action and Limit Levels in the reporting period.
- 3.1.5 All 24-hour TSP results were below the Action and Limit Levels in the reporting quarter, except for two (2) Action Level exceedance at monitoring location ID 2 on 29 March 2018 and ID 5 on 7 April 2018.
- 3.1.6 One (1) Action Level exceedance at monitoring location ID 2 was recorded on 29 March 2018. Based on the investigation, the Action Level exceedance was considered unlikely to be due to the Project-related construction works. No further Action/Limit Level exceedance was recorded at ID 2.
- 3.1.7 One (1) Action Level exceedance at monitoring location ID 5 on 7 April 2018. Based on the investigation, the Action Level exceedance was considered unlikely to be due to the Project-related construction works. No further Action/Limit Level exceedance was recorded at ID 5.
- 3.1.8 Table 3.1 presents the number of exceedances recorded in each month of the reporting quarter. The number of monitoring events included regular impact monitoring events and additional ones, if any.

Table 3.1 Summary of Number of Exceedances for 1-hr and 24-hr TSP Concentration

Monitoring Parameter	Location	Level of Exceedance	Month			
			Mar 18	Apr 18	May 18	
1-hr TSP	ID 1A	No. of monitoring events	18	18	18	
		Action	0	0	0	
		Limit	0	0	0	
	ID 2	No. of monitoring events	18	18	18	
		Action	0	0	0	
		Limit	0	0	0	
	ID 3	No. of monitoring events	18	18	18	
		Action	0	0	0	
		Limit	0	0	0	
	ID 4	No. of monitoring events	18	18	18	
		Action	0	0	0	
		Limit	0	0	0	
	ID 5	No. of monitoring events	18	18	18	
		Action	0	0	0	
		Limit	0	0	0	
	Total number of exceedance			0	0	0
	24-hr TSP	ID 1A	No. of monitoring events	6	6	6
			Action	0	0	0
Limit			0	0	0	
ID 2		No. of monitoring events	6	6	6	
		Action	1	0	0	
		Limit	0	0	0	
ID 3		No. of monitoring events	6	6	6	
		Action	0	0	0	
		Limit	0	0	0	
ID 4		No. of monitoring events	6	6	6	
		Action	0	0	0	
		Limit	0	0	0	
ID 5		No. of monitoring events	6	6	6	
		Action	0	1	0	
		Limit	0	0	0	
Total number of exceedance			1	1	0	

3.2 Construction Noise

- 3.2.1 Noise was conducted at the 5 monitoring stations (ID 1A, ID 2, ID 3, ID 4 and ID 5) for at least once per week during the construction phase (0700 – 1900) of the Project.
- 3.2.2 Fourteen (14) noise monitoring events were carried out for all monitoring stations in the reporting quarter.
- 3.2.3 According to the information provided by the Contractor, no exceedance of Action Level of noise was recorded since no noise related complaint was received in the reporting period.
- 3.2.4 No Limit Level exceedance of noise was recorded in the reporting quarter.
- 3.2.5 The graphical plots of trends of the noise monitoring results in the reporting quarter are provided in Appendix E. Major noise source included construction activities of the Project (i.e. construction of rock dowels), concurrent construction activities of another project carried out in the vicinity, nearby traffic emissions and noise from school activities and community noise.
- 3.2.6 Table 3.2 presents the number of exceedances recorded in each month of the reporting quarter. The number of monitoring events included regular monitoring events and additional ones, if any.

Table 3.2 Summary of Number of Exceedances for Construction Noise

Monitoring Parameter	Location	Level of Exceedance	Month			
			Mar 18	Apr 18	May 18	
Construction Noise	ID 1A	No. of monitoring events	5	4	5	
		Limit	0	0	0	
	ID 2	No. of monitoring events	5	4	5	
		Limit	0	0	0	
	ID 3	No. of monitoring events	5	4	5	
		Limit	0	0	0	
	ID 4	No. of monitoring events	5	4	5	
		Limit	0	0	0	
	ID 5	No. of monitoring events	5	4	5	
		Limit	0	0	0	
	Total Action Level*			0	0	0
	Total Limit Level			0	0	0

Remarks: * Number of Action Level exceedance for construction noise is the number of documented noise related complaint received in the reporting period from any one of the sensitive receivers.

3.3 Environmental Site Inspection

3.3.1 14 site inspections were conducted in the reporting quarter to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. The major concerns for the Project are air quality, noise, water quality and chemical and waste management. Particular observations and non-compliances, and their statuses are described below.

3.3.2 The Contractor has rectified most of the observations as identified during environmental site inspection in the reporting period within agreed time frame. Rectifications of remaining identified items are undergoing by the Contractor. Follow-up inspections on the status on provision of mitigation measures will be conducted to ensure all identified items are mitigated properly.

3.3.3 Air Quality Impact

- Deposited materials on the pedestrian road and U-channel were observed. The Contractor was advised to remove the materials for dust suppression and to implement measures to prevent debris from entering the drainage system.
- Soil was carried onto the public road by a site vehicle was observed. The Contractor was advised to enhance and well maintain the wheel washing facility at the exit, and wash every vehicle immediately before leaving the site to remove any dusty materials from its body and wheels.
- Fugitive dust emission from installation of rock dowel with an air-driven drill was observed. The Contractor was advised to ensure the surface is wet before the installation or provide proper enclosure for the activity for dust suppression.
- Mud trail was observed at the vehicle exit point. The Contractor was advised to clean up the mud trail; and wash vehicles immediately before leaving a construction site to remove dusty materials from the body and wheels of the vehicles.
- Handling of dusty materials was observed uncovered. The Contractor was reminded to handle the materials in an area sheltered on top and the three sides. The Contractor was also reminded to keep the footpath clean and tidy.
- The Contractor was reminded to remove the old bitumen granules on both footpath and road paving.
- Stockpile of sand was not covered. The Contractor was reminded to cover the stockpile.

3.3.4 Construction Noise Impact

- Nil

3.3.5 Water Quality Impact

- Deposition of soil was observed at the toe of water-filled barriers on the. The Contractor was reminded to remove the soil and keep the footpath clean and tidy.
- Water leakage was observed from a water pipe on the footpath. The Contractor was reminded to fix the pipe.
- Waste was accumulated in the drainage channel. The Contractor was reminded to remove the waste.

3.3.6 Chemical and Waste Management

- A chemical container without secondary containment was observed. The Contractor was advised to store it in a drip tray for preventing chemical spillage; or to dispose of it as chemical waste.
- The Chemical containers should be provided with drip tray or disposed of as chemical waste.

3.3.7 Landscape and Visual Impact

- Nil

3.3.8 Miscellaneous

- Nil

4 ADVICE ON SOLID AND LIQUID WASTE MANAGEMENT STATUS

4.1 Summary of Solid and Liquid Waste Management

- 4.1.1 The Contractor is registered as a chemical waste producer for this Project. C&D materials and wastes sorting were carried out on site. Receptacles were available for C&D wastes and general refuse collection.
- 4.1.2 As advised by the Contractor, quantity of waste for disposal in the reporting quarter is summarized in the Table 4.1.

Table 4.1 Summary of Quantity of Waste for Disposal

Type of waste	Month		
	Mar 18	Apr 18	May 18
Total C&D materials (m ³)	0 m ³	0 m ³	0 m ³
Hard Rocks and Large Broken Concrete	0 m ³	0 m ³	0 m ³
Amount Reused in the Project	0 m ³	0 m ³	0 m ³
Amount Reused in other Projects	0 m ³	0 m ³	0 m ³
Disposed of to TKO 137	0 m ³	0 m ³	0 m ³
Metals	0 kg	0 kg	0 kg
Paper cardboard packing	0 kg	0 kg	0 kg
Plastics	0 kg	0 kg	0 kg
Chemical waste	0 L	0 L	0 L
General refuse	220.09 tonnes	75.73 tonnes	277.99 tonnes

- 4.1.3 The Contractor is advised to properly maintain on site C&D materials and wastes collection, sorting and recording system and maximize reuse / recycle of C&D materials and wastes. The Contractor is reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.
- 4.1.4 The Contractor is reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practise on the Packaging, Labelling and Storage of Chemical Wastes.

5 SUMMARY OF NON-COMPLIANCE (EXCEEDANCES) OF ENVIRONMENTAL QUALITY

5.1 Summary of Exceedances and Review of the Reasons for Non-compliance

- 5.1.1 1-hour TSP results were below the Action and Limit Levels in the reporting period.
- 5.1.2 All 24-hour TSP results were below the Action and Limit Levels in the reporting quarter, except for two (2) Action Level exceedance at monitoring location ID 2 on 29 March 2018 and ID 5 on 7 April 2018.
- 5.1.3 One (1) Action Level exceedance at monitoring location ID 2 was recorded on 29 March 2018. Based on the investigation, the Action Level exceedance was considered unlikely to be due to the Project-related construction works. No further Action/Limit Level exceedance was recorded at ID 2.
- 5.1.4 One (1) Action Level exceedance at monitoring location ID 5 on 7 April 2018. Based on the investigation, the Action Level exceedance was considered unlikely to be due to the Project-related construction works. No further Action/Limit Level exceedance was recorded at ID 5. According to the information provided by the Contractor, no exceedance of Action Level of noise was recorded since no noise related complaint was received in the reporting period.
- 5.1.5 No exceedance of Limit Level of noise was recorded in the reporting period.

6 COMPLAINT, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTION

6.1 Summary of Environmental complaints, notification of summons and successful prosecutions

- 6.1.1 Referring to the information provided by the Contractor, no notification of summons and successful prosecution were received in the reporting quarter. There was one (1) environmental complaint recorded on 20 April 2018. The complaint was about dust emission by road marking removal activity on Lee On Road. After investigation, road marking on road pavement was removed by road milling machine on site. The Contractor reported that water spraying has been provided before and during road marking removal activity. However, minor dust impact may have been generated. The Contractor was reminded to ensure that sufficient water spraying was provided during road marking removal activity to suppress dust generation. During the follow-up site visit on 26 April 2018, road marking removal activity has been completed. No other dust emission was observed on site. The Complaint Investigation Report is provided in Appendix G. Table 6.1 summarized the complaint, summons and successful prosecution received in the reporting period.

Table 6.1 Summary of Environmental Complaints, Summons and Prosecutions

	Mar 18	Apr 18	May 18	Total
Complaint Logged	0	1	0	1
Summons Served	0	0	0	0
Successful Prosecution	0	0	0	0

- 6.1.2 Cumulative Statistics on Exceedances, Complaints, Notification of Summons and Successful Prosecutions recorded since the commencement of the Project are given in Appendix F.

7 COMMENTS, RECOMMENDATIONS AND CONCLUSIONS

7.1 Comments on Mitigation Measures

7.1.1 According to the environmental site inspections performed in the reporting quarter, the following comments are provided:

Air Quality Impact

- The Contractor was advised to remove the deposition of dusty materials on the pedestrian road and U-channel for dust suppression and to implement measures to prevent debris from entering the drainage system.
- The Contractor was advised to enhance and well maintain the wheel washing facility at the exit, and wash every vehicle immediately before leaving the site to remove any deposited materials from its body and wheels.
- The Contractor was advised to ensure the surface is wet before installation of rock dowel, or provide proper enclosure for the activity for dust suppression.
- The Contractor was advised to clean up the mud trail; and wash vehicles immediately before leaving a construction site to remove dusty materials from the body and wheels of the vehicles.
- The Contractor was reminded to cover stockpile of fill material with impervious sheetings.
- The Contractor was reminded to remove the old bitumen granules after road paving works.

Construction Noise Impact

- No specific observation was identified in the reporting month.

Water Quality Impact

- The Contractor was reminded to remove the soil and keep the footpath clean and tidy.
- The Contractor was reminded to properly maintain drainage on site and remove any waste accumulated in drainage.

Chemical and Waste Management

- The Contractor was advised to provide chemical containers with drip tray for preventing chemical spillage; or to dispose of it as chemical waste.

Landscape and Visual Impact

- No specific observation was identified in the reporting month.

Miscellaneous

- No specific observation was identified in the reporting month.

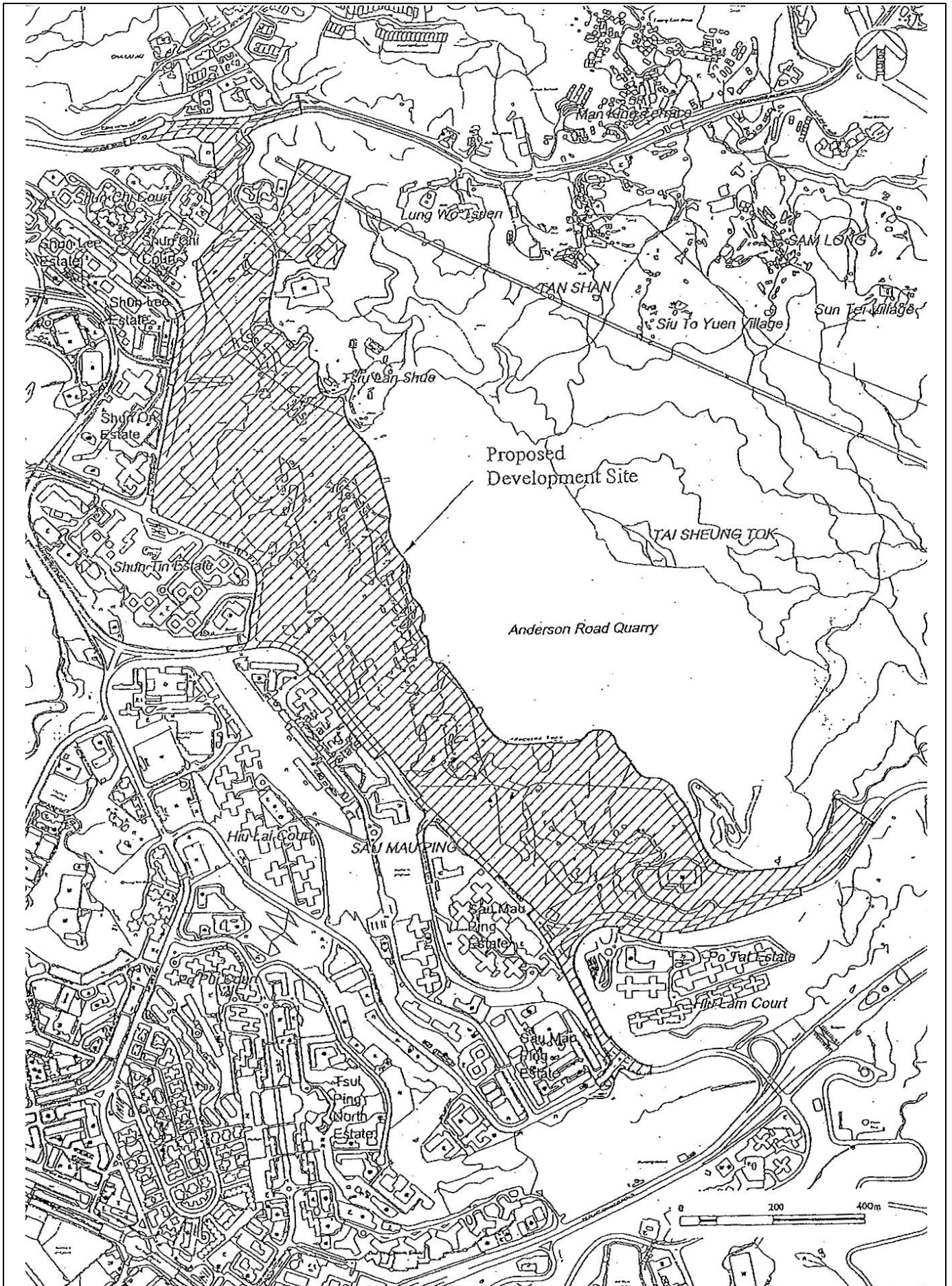
7.2 Recommendations on EM&A Programme

- 7.2.1 The impact air quality and noise monitoring programme ensured that any environmental impact to the receivers would be readily detected and timely actions could be taken to rectify any non-compliance. Assessment and analysis of monitoring results collected demonstrated the environmental acceptability of the Project. The weekly site inspection ensured that all the environmental mitigation measures recommended in the EIA report were effectively implemented.
- 7.2.2 The EM&A programme effectively monitored the environmental impacts from the construction activities and no particular recommendation was advised for the improvement of the programme.

7.3 Conclusions

- 7.3.1 Air quality and noise monitoring and weekly site inspection were carried out from March 2018 to May 2018, in accordance with the EM&A Manual.
- 7.3.2 All 1-hour TSP results were below the Action and Limit Levels in the reporting period.
- 7.3.3 All 24-hour TSP results were below the Action and Limit Levels in the reporting quarter, except for two (2) Action Level exceedance at monitoring location ID 2 on 29 March 2018 and ID 5 on 7 April 2018.
- 7.3.4 According to the information provided by the Contractor, no exceedance of Action Level of noise was recorded since no noise related complaint was received in the reporting period.
- 7.3.5 No exceedance of Limit Level of noise was recorded in the reporting period.
- 7.3.6 According to the information provided by the Contractor, no notification of summons and successful prosecution were received in the reporting quarter. There was one (1) environmental complaint recorded on 20 April 2018. The complaint was about dust emission by road marking removal activity on Lee On Road. After investigation, road marking on road pavement was removed by road milling machine on site. The Contractor reported that water spraying has been provided before and during road marking removal activity. However, minor dust impact may have been generated. The Contractor was reminded to ensure that sufficient water spraying was provided during road marking removal activity to suppress dust generation. During the follow-up site visit on 26 April 2018, road marking removal activity has been completed. No other dust emission was observed on site. The Complaint Investigation Report is provided in Appendix G.
- 7.3.7 Environmental site inspections were carried out 14 times in the reporting period. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site audit.

FIGURES

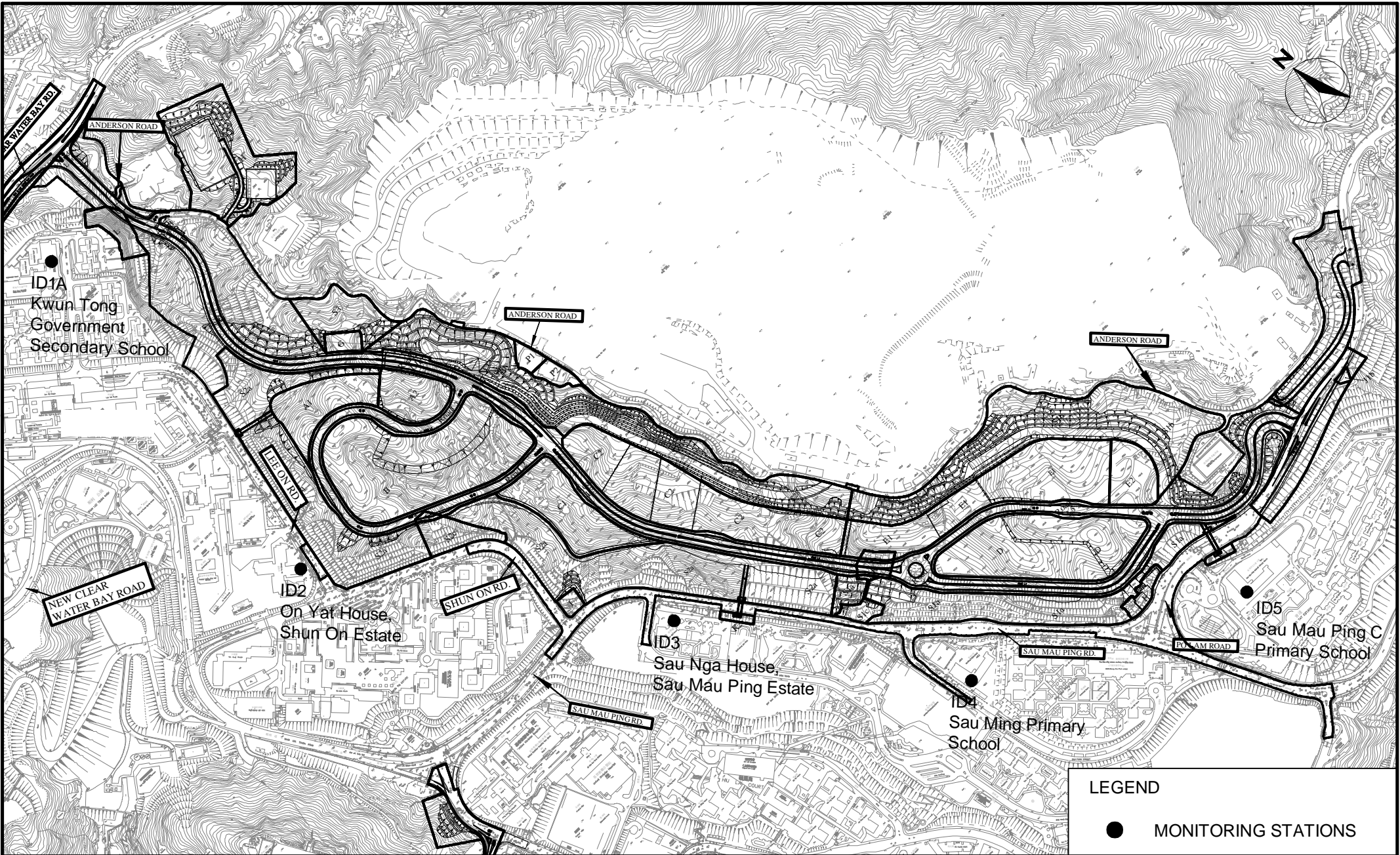


**Development at Anderson Road - Site Formation and
Associated Infrastructure Works**

GENERAL LAYOUT PLAN

SCALE	N.T.S.	DATE	Nov-09
CHECK	ENFL	DRAWN	LCHC
JOB NO.	60043155	DRAWING No.	Rev.
		FIG 1.1	-





LEGEND			
●	MONITORING STATIONS		

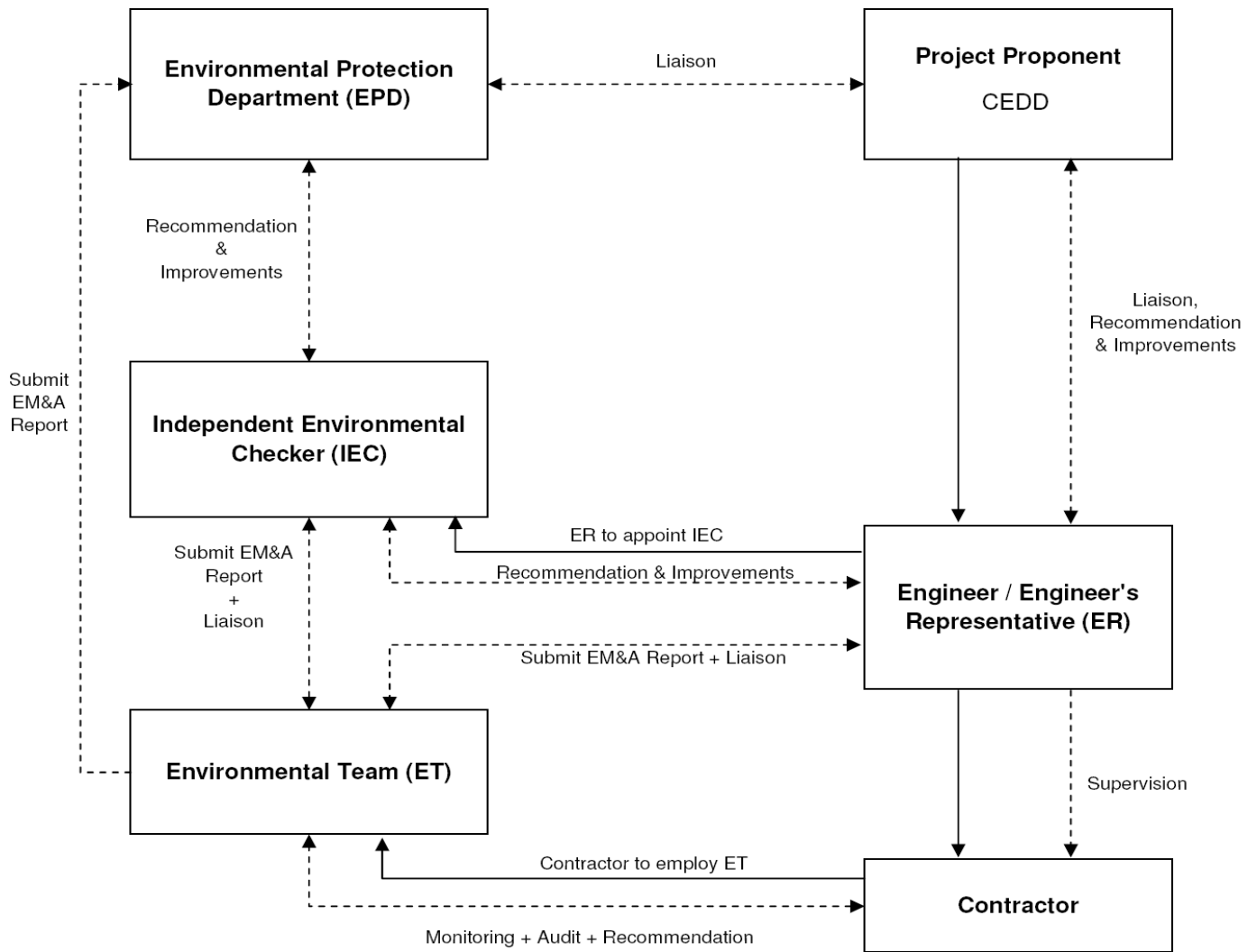


DEVELOPMENT AT ANDERSON ROAD
SITE FORMATION AND ASSOCIATED INFRASTRUCTURE WORKS
MONITORING LOCATIONS

SCALE	N.T.S.	DATE	APR 08
CHECK	CWHY	DRAWN	RWHW
JOB No.	60043155	DRAWING No.	FIG 2.1
		REV	-

APPENDIX A

Project Organization Structure



——— Employment Relationship
 - - - - - Working Relationship



Contract No. CV/2007/03
 Development at Anderson Road – Site Formation and Associated
 Infrastructure Works

Project Organization Structure

SCALE	N.T.S.	DATE	2009
CHECK	ENFL	DRAWN	LCHC
JOB NO.	60043155	APPENDIX	Rev
		A	-

APPENDIX B

**Implementation Schedule of Environmental Mitigation
Measures (EMIS)**

Appendix B - Implementation Schedule of Environmental Mitigation Measures (EMIS)

Environmental Mitigation Measures		Location	Implementation Status		
			Mar 18	Apr 18	May 18
Construction Noise Impact					
Site Formation	Silenced powered mechanical equipment (PME) for most equipment (including drill rig, backhoe, dump truck, breaker and crane) and the decrease of percentage on time usage of drill rig among the Central Area from 50% to 40% is proposed.	All construction sites	V	V	V
	Temporary movable noise barrier shall be used to shield the noise emanating from the drilling rig in order to provide adequate shielding for the affected NSRs.	All construction sites	V	V	V
Construction Air Quality Impact					
General Site	Mean vehicle speed of haulage trucks at 10km/hr.	All construction sites	V	V	V
Practice	Twice daily watering of all open site areas.	All construction sites	V	V	V
	Regular watering (once every 1 hour) of all site roads and access roads with frequent truck movement.	All construction sites	V	V	V
	During road transportation of excavated spoil, vehicles should be covered to avoid dust impact. Wheel washing facilities should be installed at all site exits together with regular watering of the site access roads.	All construction sites	V	V	V
	Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.	All construction sites	V	V	V
	Establishment and use of vehicle wheel and body washing facilities at the exit points of the site, combined with cleaning of public roads were necessary.	Site exits	@	@	V
	Suitable side and tailboards on haulage vehicles.	All construction sites	V	V	V

Environmental Mitigation Measures		Location	Implementation Status		
			Mar 18	Apr 18	May 18
General Site Practice	Watering of temporary stockpiles.	All construction sites	V	V	@
Blasting	Use of select aggregate and fines to stem the charge with drill holes and watering of blast face.	All construction sites	N/A	N/A	N/A
	Use of vacuum extraction drilling methods.	All construction sites	N/A	N/A	N/A
	Carefully sequenced blasting.	All construction sites	N/A	N/A	N/A
Crushing	Fabric filters installed for the crushing plant.	All construction sites	V	V	N/A
	Water sprays on the crusher.	All construction sites	V	V	N/A
Loading and Unloading Points, and conveyor Belt System	Water sprays at all fixed loading and unloading points (at the crusher and conveyor belts).	All construction sites	V	V	N/A
	The loading point at the crusher is enclosed with dust collection system installed.	All construction sites	V	V	N/A
	When transferring materials from conveyor belt or crusher to the dump trucks, chutes or dust curtains are used for controlling dust.	All construction sites	V	V	N/A
	Cover the conveyor belts with steel roof and canvas sides.	All construction sites	V	V	N/A
Construction Water Quality Impact					
Construction Phase	All active working areas should be bounded to retain storm water with sufficient retention time to ensure that suspended solids are not discharged from the site in concentrations above those specified in the TM for the Victoria Harbour (Phase I) WCZ. All fuel storage areas should be bounded with drainage directed to an oil interceptor.	Site drainage system	V	V	V
	Separate treatment facilities may be required for effluent from site offices, toilets (unless chemical toilets are used) and canteens.	Site drainage system	V	V	V
Construction	Discharged wastewater from the construction sites to surface water and/or	All works area	V	V	V

Environmental Mitigation Measures		Location	Implementation Status		
			Mar 18	Apr 18	May 18
Phase	public drainage systems should be controlled through licensing. Discharge should follow fully the terms and conditions in the licenses.				
	Relevant practice for dealing with various type of construction discharges provided in EPD's ProPECC Note PN 1/94 should be adopted.	All works area	@	@	@
Waste Management					
Waste Disposal	Difference types of wastes should be segregated, stored, transported and disposed of separately in accordance with the relevant legislative requirements and guidelines as proper practice of waste management.	All construction sites	@	V	@
	Sorting of wastes should be done on-site. Different types of wastes should be segregated and stored in different stockpiles, containers or skips to enhance recycling of materials and proper disposal of spoil.	All construction sites	V	V	V
	Excavated spoil should be used as much as possible to minimize off-side fill material requirements and disposal of spoil.	All construction sites	V	V	V
	Chemical waste should be recycled on-site or removed by licenced companies. It should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical wastes. When off-site disposal is required, it should be collected and delivered by licenced contractors to Tsing Yi Chemical Waste Treatment Facility and disposed of in accordance with the Chemical Waste (General) Regulation.	All construction sites	V	V	V
	Necessary mitigation measures should be adopted to prevent the uncontrolled disposal of chemical and hazardous waste into air, soil, surface waters and ground waters.	All construction sites	V	V	V
Waste Storage	Chemical material storage areas should be bounded and constructed of impervious materials, and have the capacity to contain 120 percent of the	All construction sites	V	V	V

Environmental Mitigation Measures		Location	Implementation Status		
			Mar 18	Apr 18	May 18
	total volume of the containers. Indoor storage areas must have sufficient ventilation to prevent the build-up of fumes, and must be capable of evacuating the space in the event of an accidental release. Outdoor storage areas must be covered with a canopy or contain provisions for the safe removal of rainwater. In both cases, storage areas must not be connected to the foul or stormwater sewer system.				
	Dangerous materials as defined under the DGO, including fuel, oil and lubricants, should be stored and properly labelled on site in accordance with the requirements in the DGO. If transportation of hazardous materials is necessary, hazardous materials, chemical wastes and fuel should be packed or stored in containers or vessels of suitable design and construction to prevent leakage, spillage or escape.	All construction sites	V	V	@
	Human waste should be discharged into septic tanks provided by the contractors and removed regularly by a hygiene services company. Refuse containers such as open skips should be provided at every work site for use by the workforce. On-site refuse collection points must also be provided.	All construction sites	V	V	V
Landscape and Visual					
Additional Measures	Planting and vegetation restoration (including transplanted trees) on soil slopes including restoration of grassland, scrub and woodland on slopes around the development platforms and access road. Restoration would be undertaken using predominantly native species.	Whole development	V	V	V
Additional Measures	Screen planting along the access roads, to limit impacts of elevated structures and rock slopes.	Whole development	@	@	@

Environmental Mitigation Measures		Location	Implementation Status		
			Mar 18	Apr 18	May 18
	Colouring of shotcrete slopes.	Whole development	X	X	X
	Limited planting on shotcrete slopes.	Whole development	X	X	X
	Landscape buffers and planting in and around the development itself to screen partially close views of the site.	Whole development	X	X	X
	Screen planting in front of retaining walls / granite cladding to those walls to reduce glare and visual impacts.	Whole development	@	@	@
	Careful design of road elevated structure and abutments, to limit visual impacts.	Whole development	V	V	V
	Roadside landscape features / hardworks to limit visual impacts.	Whole development	@	@	@
	Conservation of CDG or CDV recovered from the site for re-use in the landscape restoration.	Whole development	V	V	V
	Preservation (by transplanting if necessary) of any trees identified as being of particular landscape value.	Whole development	V	V	V
Ecology					
	Woodland planting on soft cut slopes available (about 13.4ha) within the development site. Native species, preferably with documented ecological utility, should be used.	Soft cut slopes	V	V	V
	Seeds of the native species when possible should be added into the hydroseeding mix. Seedlings should be pit planted with placement of slow release fertilizer.	Soft cut slopes	X	X	X
	Maintenance and service, including weeding, fertilizing, replacement of dead plants, etc. should be performed during the first 1 years of planting to enhance the survival rate of the plants.	Soft cut slopes	@	@	@

Environmental Mitigation Measures		Location	Implementation Status		
			Mar 18	Apr 18	May 18
Contaminated Land					
	In accordance with the approved Contamination Assessment Report (CAR) and Remediation Action Plan (RAP) in Nov 2006, it is recommended that cement solidification / stabilization prior to on-site backfill for heavy metal contaminated soil and excavation followed by disposal at designated landfill for organic contaminated soil. Upon the completion of the proposed remediation exercise as outlined in CAR & RAP, a Remediation Report will be compiled for submission to EPD to demonstrate that the proposed soil remediation has been carried out properly and satisfactorily. Results from the confirmation tests will also be included in the Remediation Report. Photos showing the area of excavation, the solidification process, and remediated soil and site shall also be included in the report for reference.	Locations specified in CAR	@	@	@
Landfill Gas Hazard					
	Further site investigation should be carried out during the detailed design stage in order to measure landfill gas around the perimeter of the site, to re-confirm that there is no preferential pathway for landfill gas migration and to assess the potential for landfill gas hazards on the future development. If a landfill gas hazard is identified, mitigation measures should be proposed and implemented to address the hazard.	The whole development site	V	V	V

Legend: V = implemented;
x = not implemented;
@ = partially implemented;
N/A = not applicable

APPENDIX C

Summary of Action and Limit Levels

Appendix C - Summary of Action and Limit Levels

Table 1 – Action and Limit Levels for 1-hour TSP

Location	Action Level	Limit Level
ID 1A	201.5	500
ID 2	197.0	500
ID 3	203.7	500
ID 4	264.6	500
ID 5	267.4	500

Table 2 – Action and Limit Levels for 24-hour TSP

Location	Action Level	Limit Level
ID 1A	170.2	260
ID 2	200.0	260
ID 3	200.0	260
ID 4	181.3	260
ID 5	180.8	260

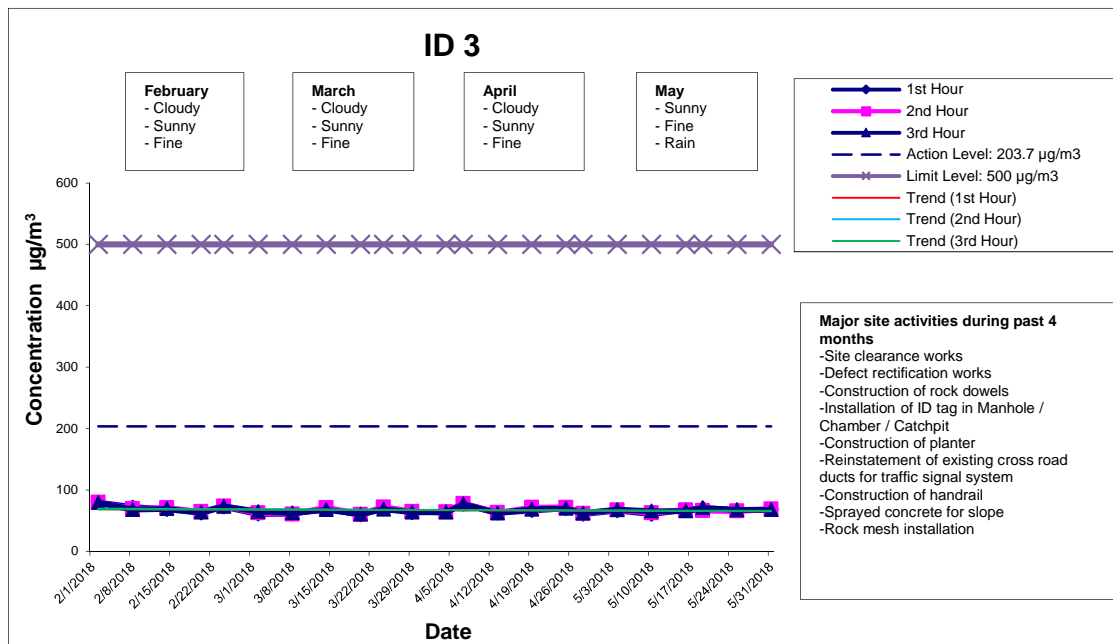
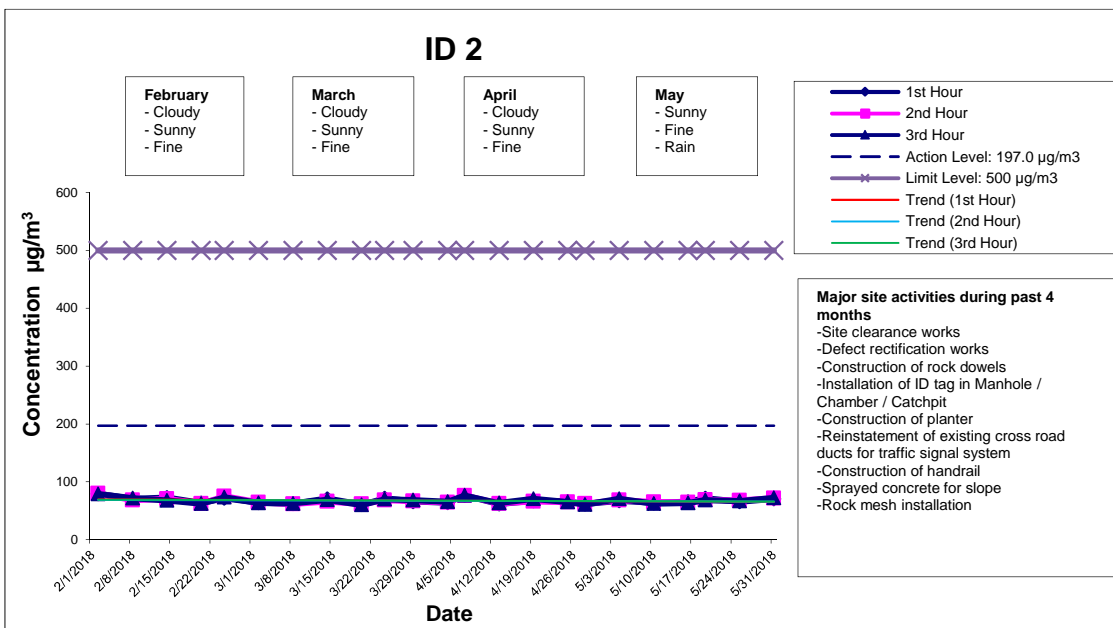
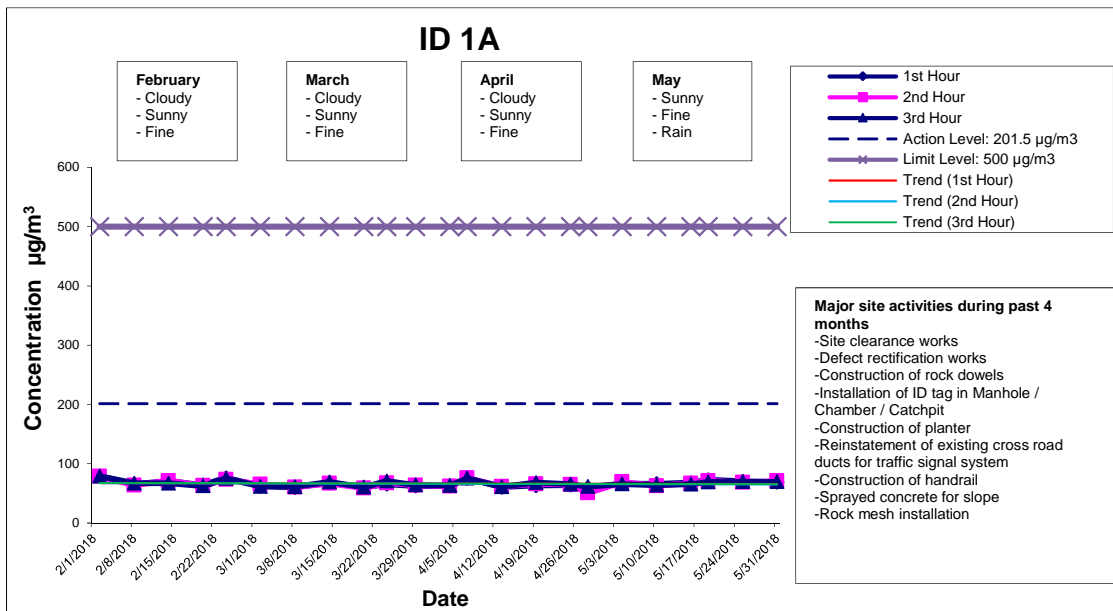
Table 3 – Action and Limit Levels for Construction Noise (0700-1900 hrs of normal weekdays)

Location	Action Level	Limit Level
ID 1A	When one documented complaint is received from any one of the sensitive receivers	*65 / 70 dB(A)
ID 2		75 dB(A)
ID 3		75 dB(A)
ID 4		*65 / 70 dB(A)
ID 5		*65 / 70 dB(A)

*Daytime noise Limit Level of 70 dB(A) applies to education institutions, while 65dB(A) applies during school examination period

APPENDIX D

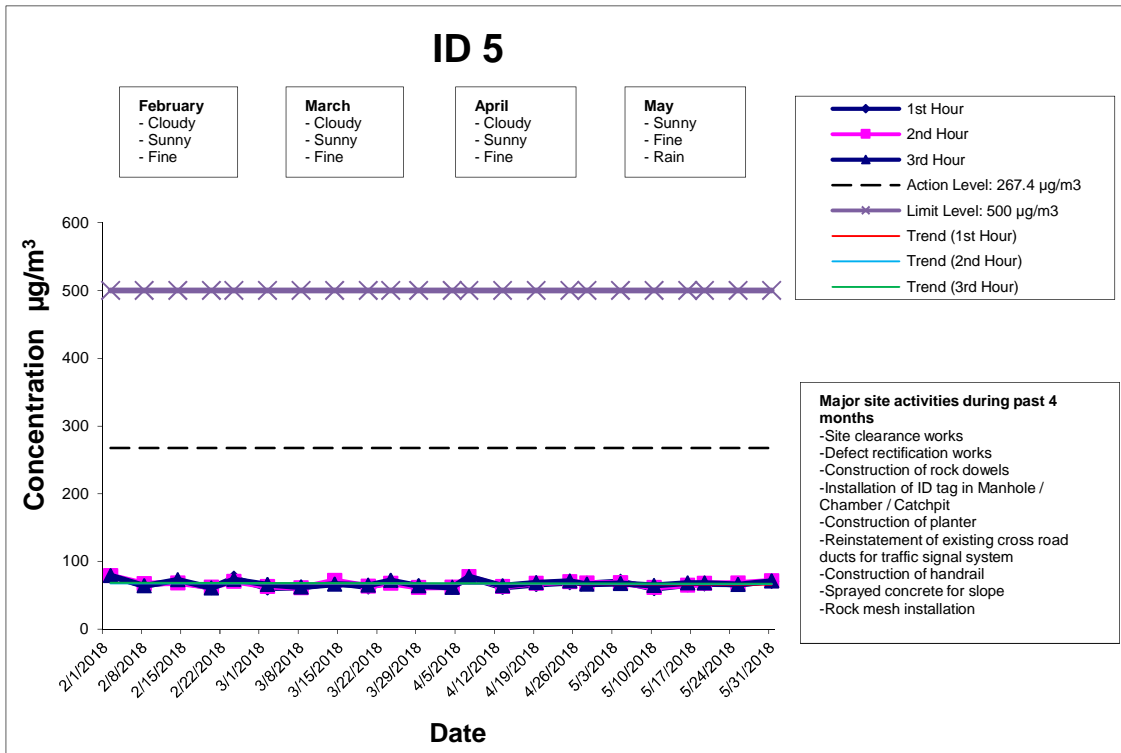
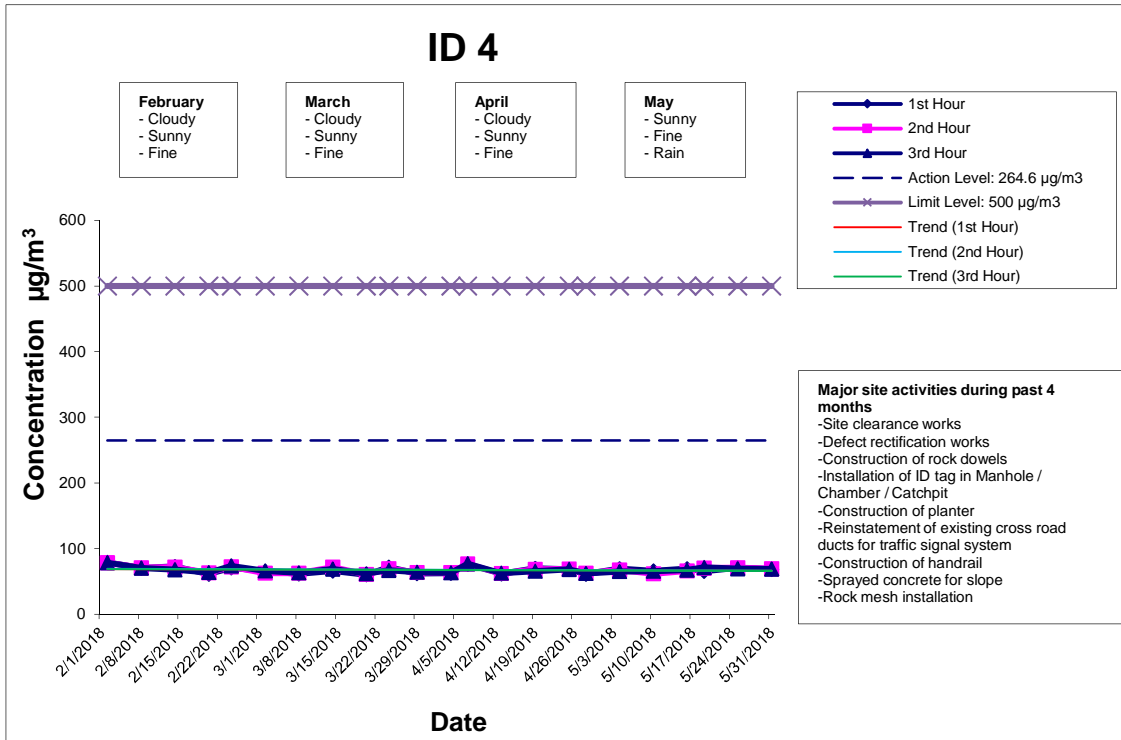
**Graphical Presentation of Impact Air Quality Monitoring
Results over the Past Four Months**



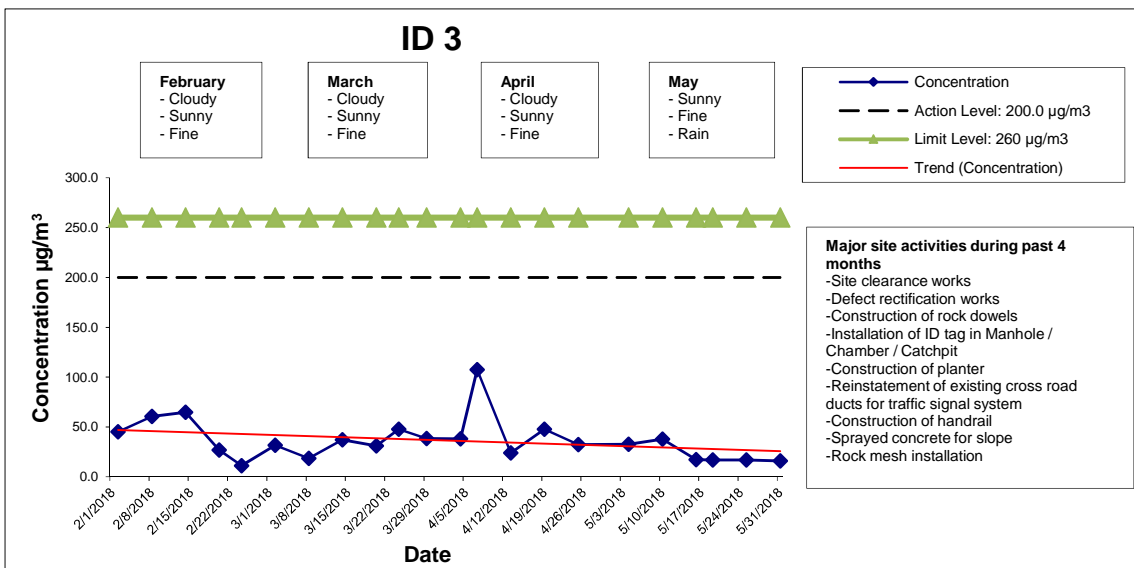
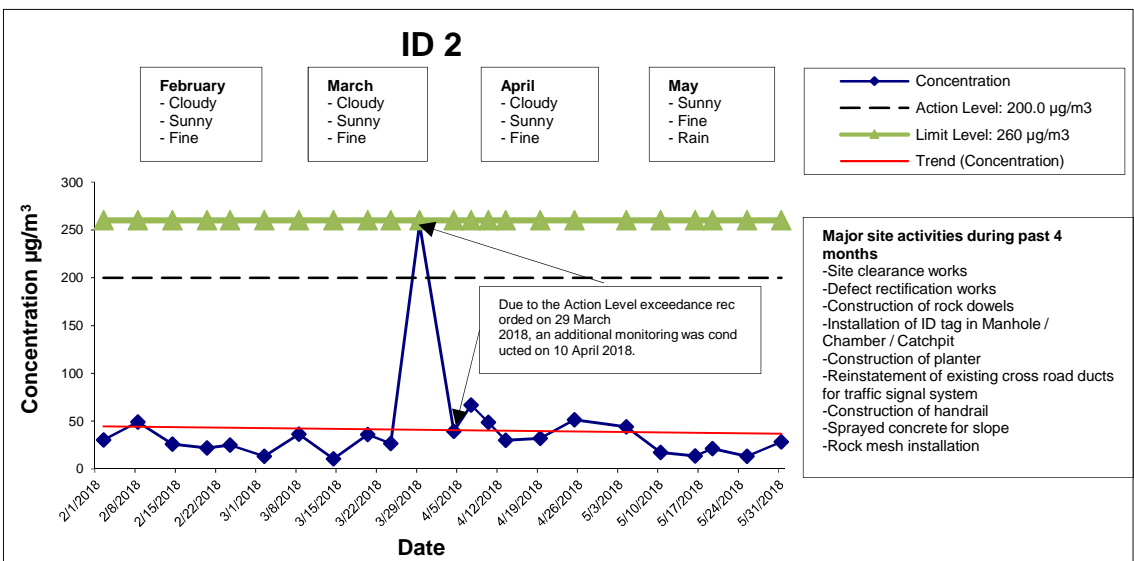
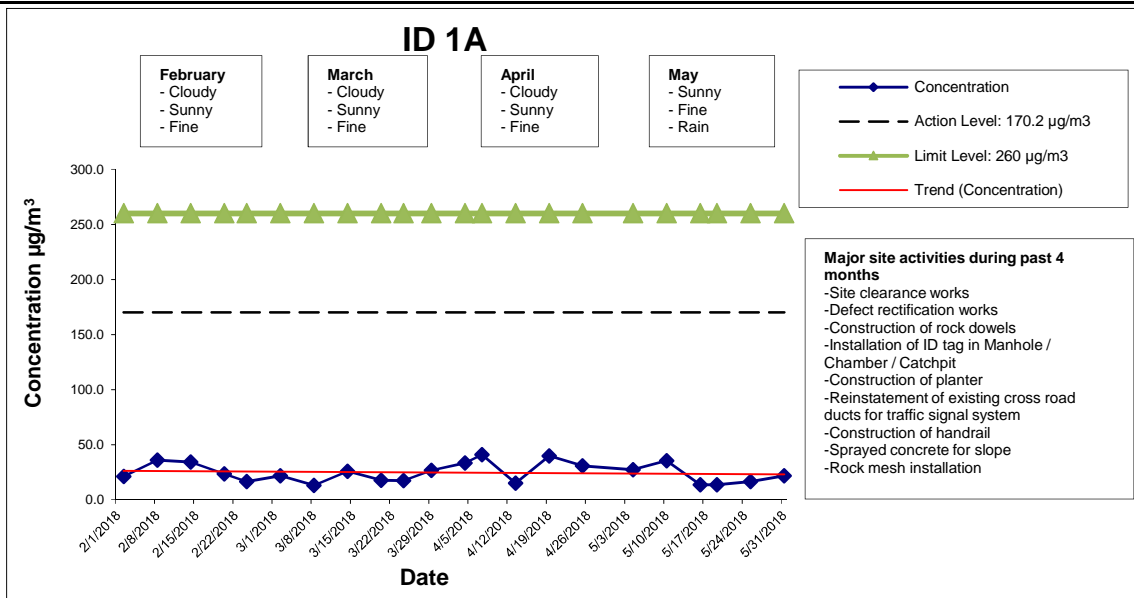
**Development at Anderson Road - Site Formation
and Associated Infrastructure Works**

**Graphical Presentations of Impact 1-hour TSP
Monitoring Results**

SCALE	N.T.S.	DATE	Mar-18
CHECK	FYW	DRAWN	DTTW
JOB NO.	60043155	APPENDIX No.	Rev.
		D	-



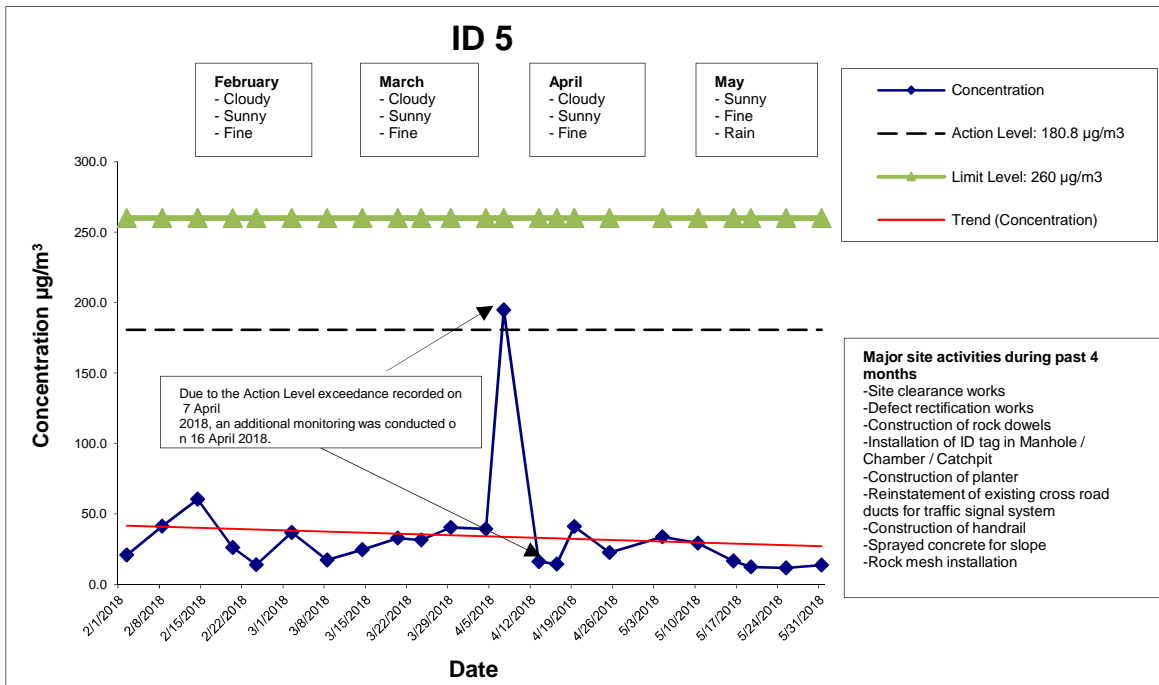
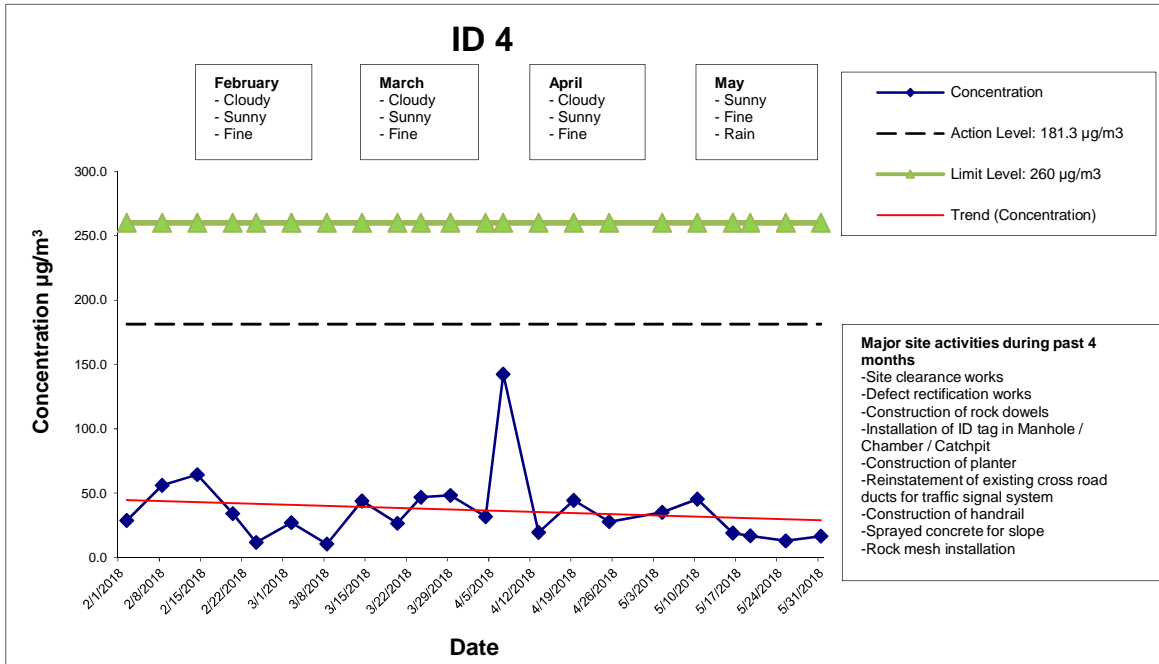
	Development at Anderson Road - Site Formation and Associated Infrastructure Works	SCALE	N.T.S.	DATE	Mar-18	
	Graphical Presentations of Impact 1-hour TSP Monitoring Results	CHECK	FYW	DRAWN	DTTW	
		JOB NO.	60043155	APPENDIX No.		Rev.
				D	-	



**Development at Anderson Road - Site Formation
and Associated Infrastructure Works**

**Graphical Presentations of Impact 24-hour TSP
Monitoring Results**

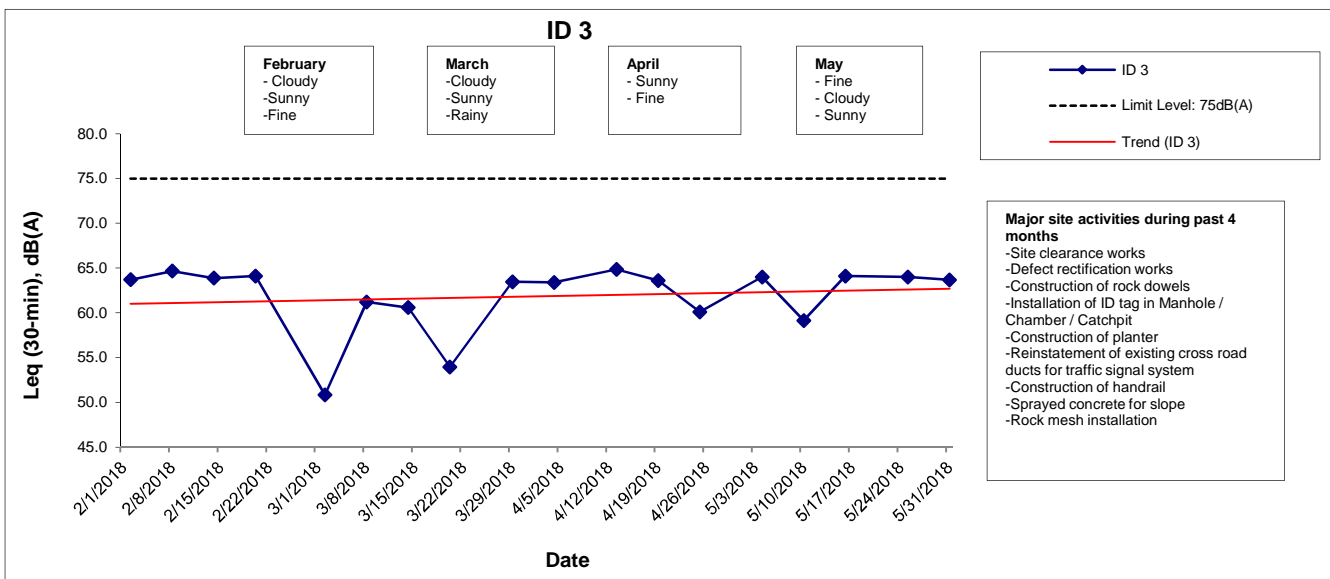
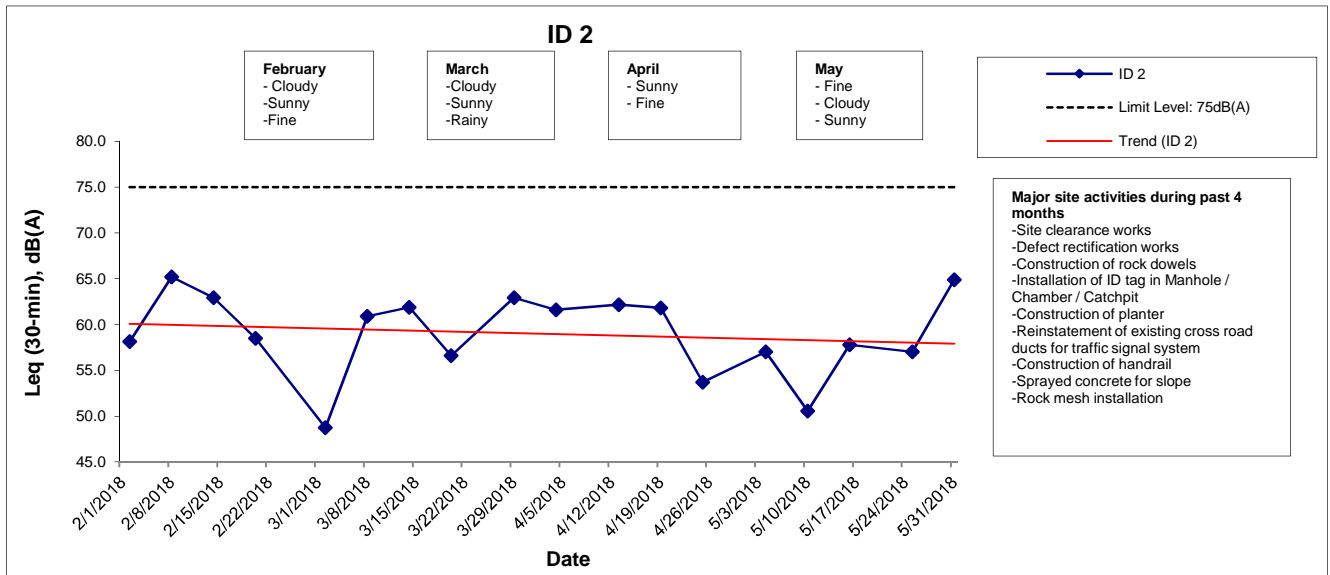
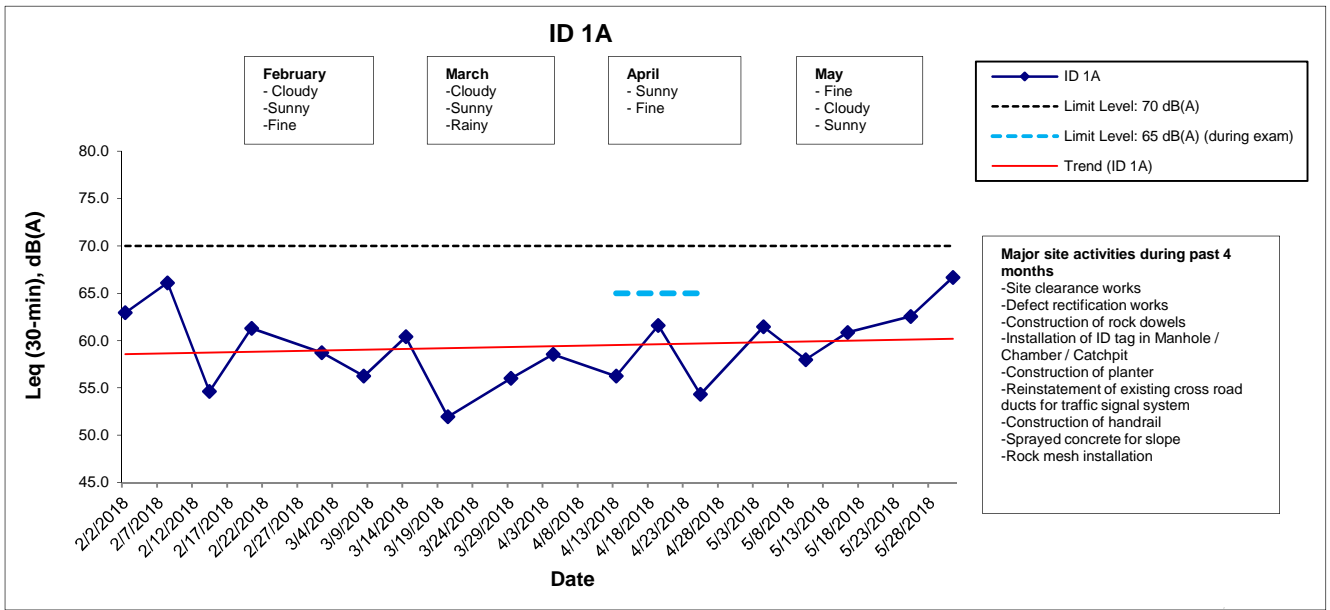
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CHECK	FYW	DRAWN	DTTW
JOB NO.	60043155	APPENDIX No.	Rev.
		D	-



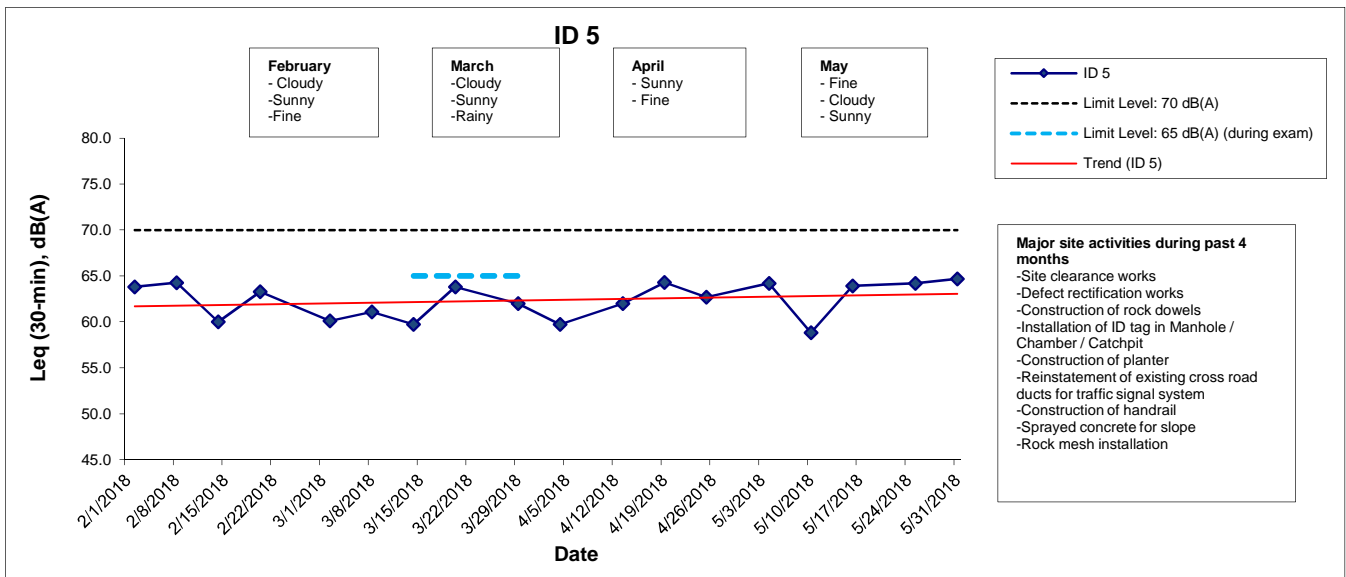
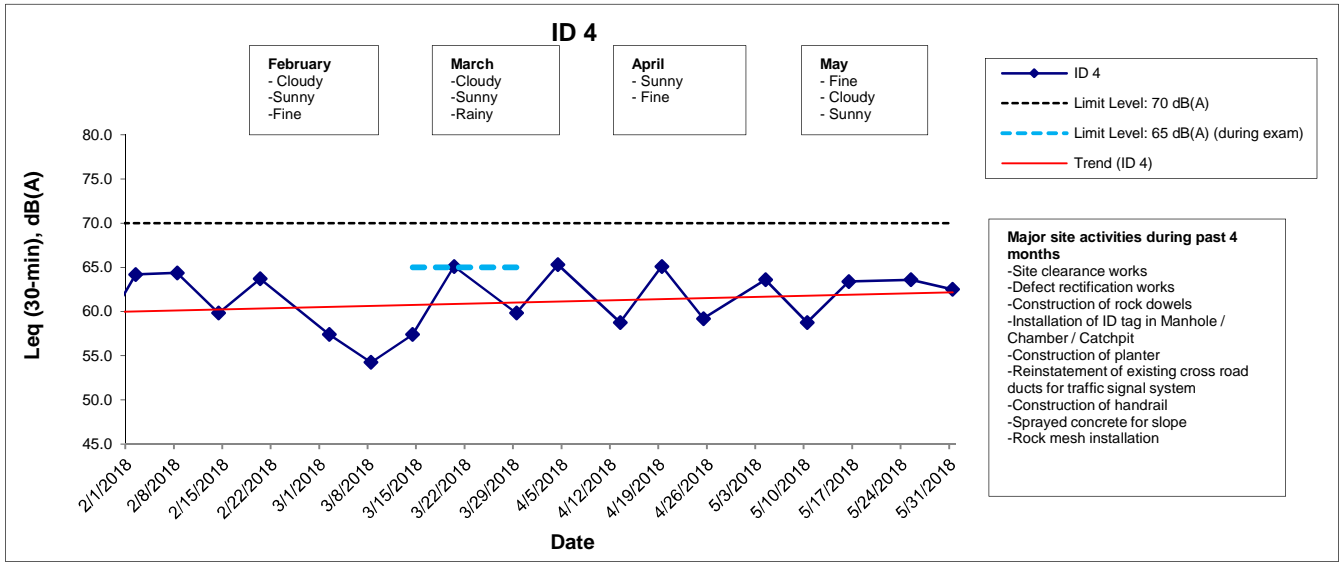
	Development at Anderson Road - Site Formation and Associated Infrastructure Works	SCALE	N.T.S.	DATE	Mar-18
	Graphical Presentations of Impact 24-hour TSP Monitoring Results	CHECK	FYW	DRAWN	DTTW
		JOB NO.	60043155	APPENDIX No.	D
					-

APPENDIX E

**Graphical Presentation of Noise Monitoring Results over the
Past Four Months**



	Development at Anderson Road - Site Formation and Associated Infrastructure Works		SCALE	N.T.S.	DATE	Jul-18
	Graphical Presentations of Noise Monitoring Results		CHECK	FYW	DRAWN	DTTW
			JOB NO.	60043155	APPENDIX	Rev
				E		-



	Development at Anderson Road - Site Formation and Associated Infrastructure Works	SCALE	N.T.S.	DATE	Jul-18
	Graphical Presentations of Noise Monitoring Results	CHECK	FYW	DRAWN	DTTW
		JOB NO.	60043155	APPENDIX E	

APPENDIX F

**Cumulative Statistics on Exceedances, Complaints,
Notification of Summons and Successful Prosecutions**

Appendix F - Cumulative Statistics on Exceedances, Complaints, Notification of Summons and Successful Prosecutions

Cumulative statistics on Exceedances

		Total no. recorded in this quarter	Total no. recorded since project commencement
1-Hour TSP	Action	-	-
	Limit	-	-
24-Hour TSP	Action	2	17
	Limit	-	1
Noise	Action	-	32
	Limit	-	1

Cumulative statistics on Complaints, Notifications of Summons and Successful Prosecutions

	Date Received	Subject	Status	Total no. recorded in this quarter	Total no. recorded since project commencement
Environmental complaints	24 April 2018 from RSS	Dust generation during road marking removal activity on Lee On Road	Closed	1	75
Notification of summons	-	-	-	-	6
Successful Prosecutions	-	-	-	-	2

APPENDIX G

**Investigation Report on Action Level Non-compliance &
Environmental Complaint Action Form**

INVESTIGATION REPORT ON ACTION LEVEL NON-COMPLIANCE

REF. NO.: A011

Project	Contract No. CV/2007/03 Development at Anderson Road - Site Formation and Associated Infrastructure Works
Monitoring Date	29 March 2018
Monitoring Time	28 March 2018 16:00 – 29 March 2018 16:00
Monitoring Location	ID 2: On Yat House
Parameter	24-hour TSP
Action & Limit Levels ($\mu\text{g}/\text{m}^3$)	Action Level: 200 Limit Level: 260
Measured Level($\mu\text{g}/\text{m}^3$)	256.2
Possible reasons for Action Level Non-compliance	<p>Functional checking on HVS at ID 2 was done. Air flows of the HVS were checked and the flows were steady during the 24-hr TSP sampling at ID 2 (Figure 1). The filter paper was re-weighted by the assigned HOKLAS laboratory and the result was reconfirmed.</p> <p>According to the information provided by the Contractor, no works were undertaken within the construction site during the monitoring period in the vicinity of ID 2. According to the information provided by the Property Management Office of Shun On Estate, no works were undertaken on the rooftop of On Yat House during the monitoring period in the vicinity of ID 2.</p> <p>Wind data were extracted from the Tseung Kwan O wind station during the monitoring period (Figures 2-5). The prevailing east and northeast wind were recorded during the monitoring period. According to the wind directions, the measured dust levels at ID 2 should not be contributed by the Project-related construction works.</p> <p>In addition to the scheduled monitoring on 4 April 2018, additional monitoring was conducted at ID 2 on 10 April 2018. No further Action/Limit Level exceedance was recorded at all air quality monitoring stations. Based on the investigation, the Action Level exceedance at ID 2 was considered unlikely to be due to the Project-related construction works.</p>
Actions taken / to be taken	--
Remarks	--


Prepared by: Yiu Wah Fung
Designation: Environmental Team Leader
Signature: 
Date: 24 April 2018

Figure 1 – Location of Monitoring Station ID 2

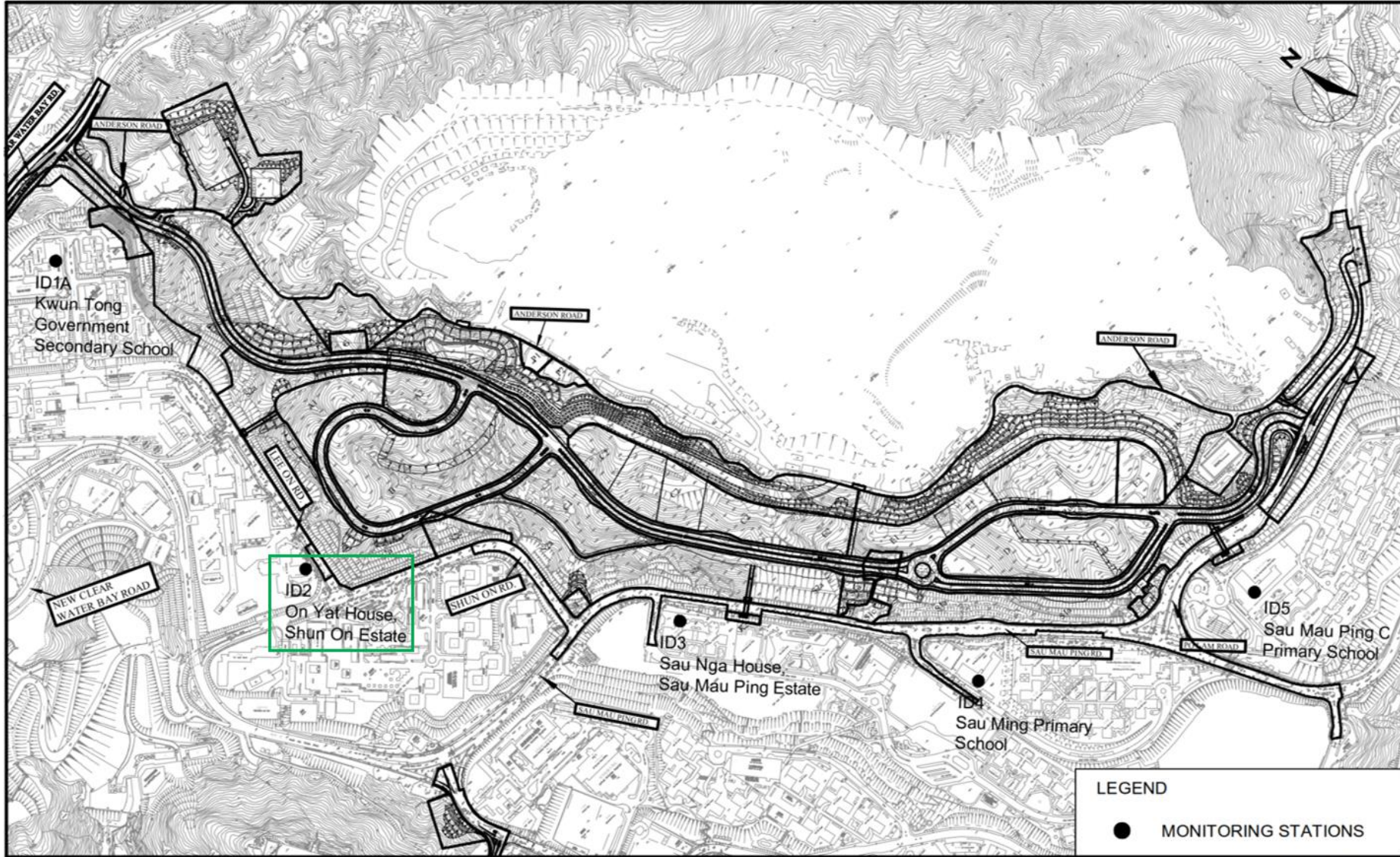


Figure 2 – Wind Direction Recorded at Tseung Kwan O Station of Hong Kong Observatory on 28 March 2018

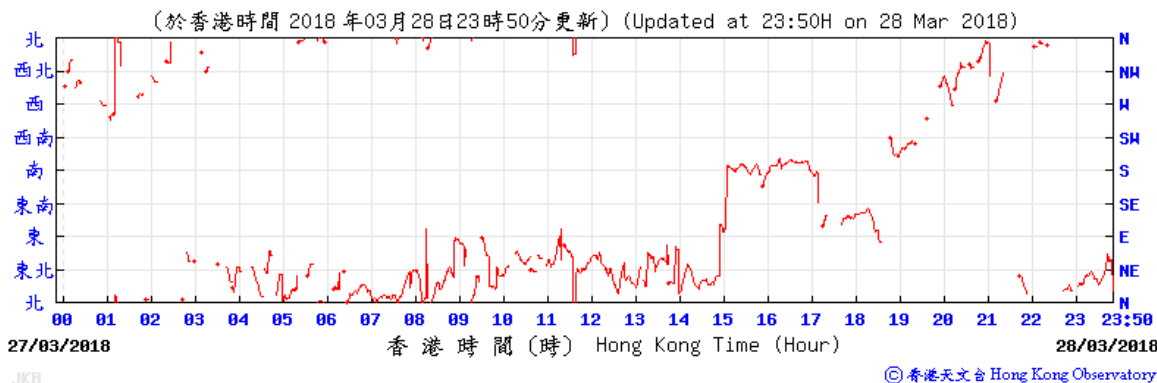


Figure 3 – Wind Direction Recorded at Tseung Kwan O Station of Hong Kong Observatory on 29 March 2018

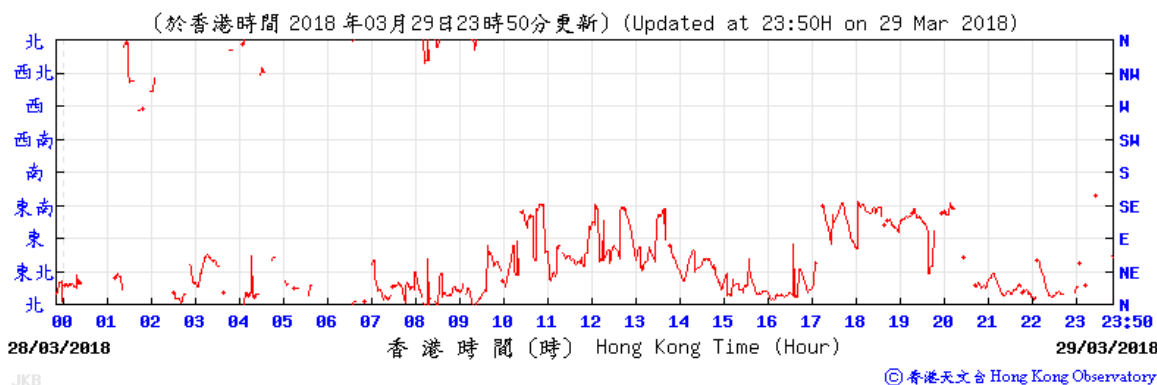


Figure 4 – Wind Speed Recorded at Tseung Kwan O Station of Hong Kong Observatory on 28 March 2018

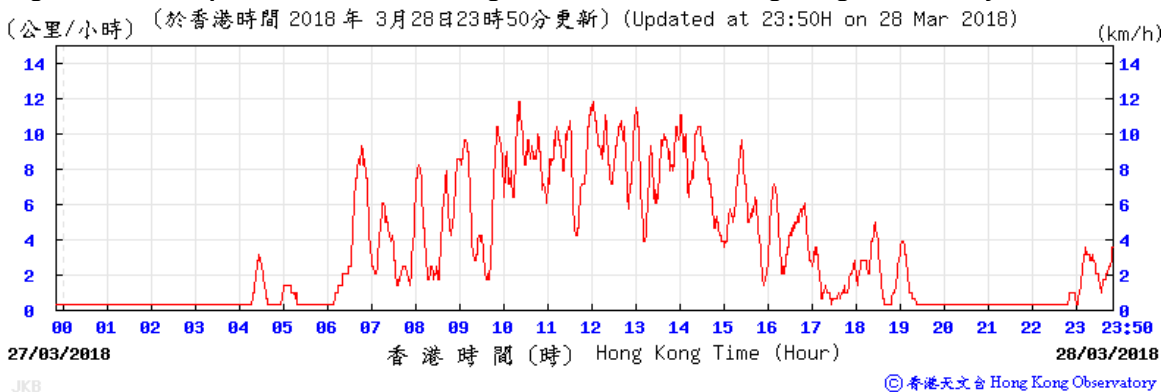
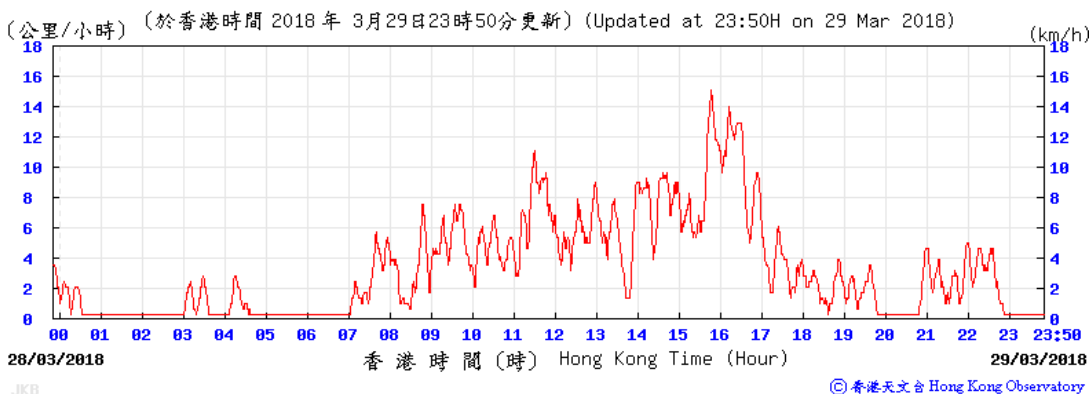


Figure 5 – Wind Speed Recorded at Tseung Kwan O Station of Hong Kong Observatory on 29 March 2018



INVESTIGATION REPORT ON ACTION LEVEL NON-COMPLIANCE

REF. NO.: A012

Project	Contract No. CV/2007/03 Development at Anderson Road - Site Formation and Associated Infrastructure Works
Monitoring Date	7 April 2018
Monitoring Time	6 April 2018 16:00 – 7 April 2018 16:00
Monitoring Location	ID 5: Sau Mau Ping Catholic Primary School
Parameter	24-hour TSP
Action & Limit Levels ($\mu\text{g}/\text{m}^3$)	Action Level: 180.8 Limit Level: 260
Measured Level($\mu\text{g}/\text{m}^3$)	194.7
Possible reasons for Action Level Non-compliance	<p>Functional checking on HVS at ID 5 was done. Air flows of the HVS were checked and the flows were steady during the 24-hr TSP sampling at ID 5. The filter paper was re-weighted by the assigned HOKLAS laboratory and the result was reconfirmed.</p> <p>According to the information provided by the Contractor, no works were undertaken within the construction site during the monitoring period in the vicinity of ID 5.</p> <p>According to the information provided by the staff of Sau Mau Ping Catholic Primary School, cleaning of the outdoor units of split-type air-conditioners (located near the HVS at ID 5) was conducted on 6 and 7 April 2018 (Figures 1 and 2). The dust removed from the outdoor units may contribute to the measured dust levels at ID 5.</p> <p>Since no exceedance was recorded at other air quality monitoring stations (i.e. ID 1A, ID 2, ID 3, and ID 4), dust generation considered to be localized at ID 5.</p> <p>In addition to the scheduled monitoring on 13 April 2018, additional monitoring was conducted at ID 5 on 16 April 2018. No further Action/Limit Level exceedance was recorded at all air quality monitoring stations.</p> <p>Based on the investigation, the Action Level exceedance at ID 5 was considered unlikely to be due to the Project-related construction works.</p>
Actions taken / to be taken	--
Remarks	--


Prepared by: Yiu Wah Fung
Designation: Environmental Team Leader
Signature: 
Date: 19 April 2018

Figure 1 – Location of HVS and the outdoor units of split-type air-conditioners at ID 5



Figure 2 – Location of HVS and the outdoor units of split-type air-conditioners at ID 5



CONTRACT NO. CV/2007/03
Development at Anderson Road
Site Formation and Associated Infrastructure Works

ENVIRONMENTAL COMPLAINT ACTION FORM

Environmental Enquiry No.: EC-074
(Related Previous Enquiry NO.: --)

COMPLAINT DETAILS

Date Received	24 April 2018 From: Referral (RSS referred the complaint details from EPD to ET)
Parameter	* Air / Noise / Water / Waste
Enquirer's Details	
Name	Undisclosed
Contact Tel No.	Undisclosed
Address	Undisclosed

FOLLOW-UP ACTION

First Contact with the Complaint by	* Telephone / Site Visit
Date of the First Contact	20 April 2018
<p>Details of Complaint:</p> <p>A complaint was referred by EPD during inspection on 20 April 2018. The complaint was about dust emission by road marking removal activity on Lee On Road.</p>	
<p>Investigation and Findings :</p> <p>Road marking removal activity was undertaken on 20 April 2018. Road marking on road pavement was removed by road milling machine on site. The Contractor reported that water spraying has been provided before and during road marking removal activity. However, minor dust impact may have been generated.</p>	
Exceedance Associated with Site Activity to	* No Exceedance / Action / Limit
<p>Recommended Mitigation Measures:</p> <p>The Contractor should ensure that sufficient water spraying was provided during road marking removal activity to suppress dust generation.</p>	

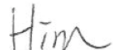
* Delete where inappropriate

MONITORING

Ad hoc Monitoring undertaken	* Yes /No
Result : --	

* Delete where inappropriate

FOLLOW-UP SITE VISIT

Date	Observation	Signature
26 April 2018	Road marking removal activity has been completed. No other dust emission was observed on site.	

FOLLOW-UP PHONE CALL TO COMPLAINANT

Date	Complainant's Comment
--	--

Prepared by: Yiu Wah Fung

Designation: Environmental Team Leader

Signature:  _____

Date: 30 April 2018